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124 NEW OR LITTLE-KNOWN TIPULIDAE FROM
VENEZUELA (DIPTERA)

Part II

by

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In the present instalment I am discussing a series of unusually interesting Tipulidae that were taken in the State of Merida by Messrs. Pablo J. Anduze and Rene Lichy. Material from the Venezuelan Andes is always of great interest and importance, and the present series adds several species of crane-flies to the known fauna of the republic. I am greatly indebted to Mr. Anduze for the privilege of retaining the types of the novelties described herewith; as before, duplicates of the available species have been returned to Mr. Anduze for the National Colecction.

Holorusia (Holorusia) plagifera sp. n.

General coloration of mesonotal praescutum brown, with narrow blackened stripes; antennal flagellum dark brown; the segments cylindrical, the outer two with conspicuous verticils; thoracic pleura obscure brownish yellow to buffy; femora obscure yellow, the tips narrowly but conspicuously blackened; wings brown, variegated by darker brown and whitish subhyaline areas, the latter chiefly represented by paired markings in cell *M* adjoining vein *Cu*, and as an obliterative area before the cord; *Rs* long; cell 1st *M*₂ small, pen-

tagonal; cell M_1 deep, exceeding twice its petiole; abdominal tergites brown, with three more or less distinct darker stripes; sternites obscure yellow; ovipositor with cerci appearing as broadly flattened compressed blades, hypovalvae much reduced.

Female. — Length about 22 mm.; wing 22 mm.

Frontal prolongation of head of moderate length, black, the subdorsal portion at base a little paler; nasus very long and slender, black; palpi black, the elongate terminal segment pale yellow. Antennae with scape pale brown, pedicel obscure yellow; flagellum uniformly dark brown; flagellar segments cylindrical, the outer two segments with conspicuous verticils. Head above brown, darker brown on central portion, especially the vertex; front gray pruinose; lower surface of head yellow; anterior vertex relatively narrow, a little more than twice the diameter of scape.

Pronotum dark brown. Mesonotal praescutum chiefly covered by four brown stripes, the interspaces occupied by narrow blackened borders to the stripes, the most conspicuous line being a narrow median vitta; scutum brown; scutellum dark brown basally and on sides, the posterior central portion paler, with a capillary black median line; parascutella dark brown; mediotergite brownish gray, obscure yellow on posterior third, with a capillary brown median vitta and broader, more diffuse sublateral darkenings; lateral border of pronotum restrictedly obscure yellow; pleurotergite obscure yellow on cephalic half or less, more brownish black on posterior portion. Pleura obscure brownish yellow to buffy. Halteres dark brown, the base of stem restrictedly pale. Legs with coxae and trochanters obscure yellow, the fore coxae a trifle darker; femora obscure yellow, the tips narrowly but conspicuously blackened, the amount subequal on all legs; tibiae obscure brownish yellow, the tips very narrowly darkened; tarsi light brown. Wings with a brown tinge, variegated with darker brown and whitish subhyaline areas; cell C brownish yellow, cell Sc darker; the darkest areas of wing include a post-arcular marking in base of cell M and another in cell M at near midlength of vein Cu ; stigma brown; more restricted

brown clouds at origin of *Rs* and as a very narrow seam along the cord; the whitish pattern includes two conspicuous rectangular areas in cell *M*, one on either side of the central dark marking, neither of these areas involving cell *R* which is uniformly of the brown ground with the exception of a linear whitening before the origin of *Rs* and a brightening before the stigma and anterior cord; posterior portion of arcular field and the bases of cells *Cu*, 1st *A* and 2nd *A* whitened; cell *Cu*₁ light brownish yellow; veins brown, a little paler in the prearcular field. Venation: *Rs* long, about two and one-half times *m-cu*, arcuated at origin; vein *R*₄₊₅ strongly arched to subangulate at near midlength, strongly narrowing the cell; cell 1st *M*₂ small, pentagonal; cell *M*₁ deep, exceeding twice the length of its petiole; *m-cu* just before the fork of *M*₃₊₄.

Abdominal tergites brown, more darkened medially and sublaterally, the areas almost continuous to form stripes; sternites obscure yellow or orange-yellow; ovipositor with cerci appearing as broadly flattened compressed blades, the tips subacute; hypovalvae much reduced.

Holotype, ♀, Rancho Grande, Edo. Aragua, September 3, 1942 ((*Lichy*)).

In the venation, especially the small cell 1st *M*₂, the present fly is most similar to *Holorusia* (*Holorusia*) *guatemalensis* Alexander, *H. (H.) sinuosa* Alexander, and *H. (H.) strangalia* Alexander, all of Tropical America. It is closest to *strangalia* in the fact that the conspicuous white areas of cell *M* of the wings do not extend cephalad into cell *R*; it differs from this latter species in the long *Rs*, much deeper cell *M*₁, position of *m-cu* close to the fork of *M*₃₊₄, and in other features of coloration and venation.

Tipula neivai Alexander.

1940. *Tipula neivai* Alex.; Rev. de Ent., XI: 895-897 (Venezuela).

The type, a female, was from Merida, Venezuela (Páramo de Mucuchies, June 10, 1938, through Vivas-Berthier). In the present material are 2 males, 2 females, from Apartaderos, Merida, altitude 3,320 meters, September 1942 (*Anduze*).

The present specimens agree with the type in the rather peculiar striped wing pattern; in some specimens, especially the males, the white band at mid-width of the wing is much narrower than in the type and more or less interrupted in cell *M* and again across the outer half of cell 1st *M*₂; in such specimens, the pale central stripe does not reach the wing apex in cell *R*₅ or scarcely so. The narrow dark femoral rings are darker in color and more nearly apical in position than in the type. In the male, the basal flagellar swellings are unusually abrupt and conspicuous, each enlargement tipped with a powerful bristle that is virtually as long as the pedicel of the segment beyond the swelling; erect pale setae of the pedicels relatively sparse and inconspicuous but with some of unusual length, interspersed with other smaller pale setulae. Male hypopygium with the lobe of the eighth sternite small, transverse or even slightly bilobed.

Limonia (Dicranomyia) longiventris (Alexander).

1913. *Dicranomyia longiventris* (Alex.), Journ. N.Y. Ent. Soc., XXI: 198 (Colombia).

Described from high altitudes in the Colombian Andes (Valle de las Papas, Cordillera Central, altitude about 10,000 feet, March); new to Venezuela. Apartaderos, Merida, altitude 3,320 meters, September 1942 (*Anduze*).

Limonia (Dicranomyia) bicomifera sp. n.

General coloration gray, the praescutum with four narrow, darker brown stripes; antennae black throughout; posterior sclerites of notum and the pleura light gray; legs passing through dark brown to black; wings with a strong brownish tinge; stigma oval, slightly darker than the ground; *Sc*₁ subequal in length to *Rs*, ending about opposite the origin of the latter; male hypopygium with the tergite transverse, the caudal margin subtruncate to very feebly emarginate; ventral dististyle large, the rostral prolongation bearing a flattened glabrous flange on its face; mesal face of ventral dististyle with two conspicuous setiferous lobes, the outermost elongate, provided with short setae, the more cephalic lobe rounded, with conspicuous elongate bristles.

Male. — Length about 7.5 - 8.5 mm.; wing 9 - 10 mm.

Female. — Length about 10 - 11 mm.; wing 10 - 11 mm.

Rostrum black, very sparsely pruinose; palpi black. Antennae black throughout; flagellar segments passing through oval to long-oval; terminal segment narrowed on apical third; longest verticils at midlength of flagellum, slightly longer than the segments. Head clear gray; anterior vertex (male) relatively wide, approximately three and one-half to four times the diameter of scape.

Pronotum clear gray above, long and conspicuous. Mesonotum varying from gray to fulvous brown, the praescutum with four narrow but conspicuous darker brown stripes, the intermediate pair separated by a capillary line of the ground color; scutal lobes infuscated; posterior sclerites of notum clear light gray. Pleura gray, weakly tinged with brown on the ventral sternopleurite. Halteres relatively short, stem obscure yellow, knob infuscated. Legs with the coxae pale, especially the posterior pair, the others more pruinose; trochanters obscure yellow; remainder of legs passing through dark brown to black. Wings with a strong brown tinge, the prearcular and costal fields a trifle more yellow; stigma oval, slightly darker than the ground; veins brown. Venation: Sc_1 ending approximately opposite the origin of R_s , Sc_2 some distance from its tip, Sc_1 alone subequal to or longer than R_s ; R_2 and free tip of Sc_2 in approximate transverse alignment; cell 1st M_2 short-rectangular, shorter than any of the veins beyond it; $m-cu$ at fork of M .

Abdominal tergites brownish black, sparsely pruinose, the sternites obscure brownish yellow to pale brown; outer segments, including hypopygium, dark brown; incisures of segments vaguely pale. Male hypopygium (Fig. 1) with the tergite, $9t$, transverse, the posterior margin very gently emarginate to almost truncate; setae arranged in transverse bands on either side of the median line, the more cephalic rows stronger and with larger punctures. Basistyle, b , relatively small, its ventromesal lobe correspondingly large, elongate-oval; caudal-mesial angle of basistyle with a loose group of

strong black setae. Dorsal dististyle a strongly curved sickle, its tip acute. Ventral dististyle, *vd*, a large fleshy lobe, its area nearly twice that of the basistyle, including the lobe of the latter; rostral prolongation of moderate size, the two spines placed near the base of outer margin, arising from a low common tubercle; spines subequal in length, shorter than the prolongation; on face of prolongation a conspicuous semicircular blade or flange that sometimes lies caudal of the base of the spines, in other cases more pendant (as shown in subfigure); on face of style immediately caudal of base of prolongation with an elongate lobe set with numerous setae; near cephalic-mesial angle of ventral dististyle with a second, small rounded lobe that is densely tufted with much longer setae. Gonapophyses, *g*, with mesal-apical lobe relatively slender, gently curved to the subacute tip.

Holotype, ♂, Merida, environs of Chachopo, altitude 2,800 meters, August 7, 1942 (*Lichy*). *Allotype*, ♀, pinned with type. *Paratypes*, several ♂ ♀, Merida, Apartaderos, altitude 3,320 meters, September 1942 (*Anduze*).

Limonia (Dicranomyia) bicomifera is quite different from all other regional species of the subgenus. In the general structure of the male hypopygium, it is superficially most similar to *L. (D.) quadrituberculata* Alexander, of Colombia, and *L. (D.) trituberculata* Alexander, of Chile, but is very different in all details of structure.

Limonia (Dicranomyia) meridicola sp. n.

Allied to *andicola*; general coloration of notum reddish yellow, the pronotum and cephalic half of praescutum with a median black stripe; antennal flagellum black; wings pale yellow or subhyaline, without pattern; *Sc*₁ ending about opposite origin of *Rs*; male hypopygium with the tergite subtruncate across caudal border; gonapophyses with mesal-apical lobe large and pale, clublike, produced into numerous scattered pale tubercles and fewer marginal spines.

Male. — Length about 8.5 - 9 mm.; wing 11 - 11.5 mm.

Female. — Length about 11 - 11.5 mm.; wing 12 - 13 mm.

Rostrum relatively small, dark brown; palpi black. Antennae with the scape brown, remainder of organ black; flagellar segments passing through oval to long-oval; verticils subequal in length to the segments. Head uniformly gray; anterior vertex (male) of moderate width, approximately one-half wider than the diameter of scape.

Pronotum darkened above, paling to reddish yellow on sides. Mesonotal praescutum reddish yellow, with a single median black stripe that becomes obsolete beyond midlength of the sclerite; posterior sclerites of notum more uniform reddish yellow, the scutellum and central portion of scutum more testaceous. In some specimens, the general coloration of the mesonotum is darker. Pleura and pleurotergite reddish yellow, the sternopleurite and adjoining portions of the propleura, with the fore coxae, strongly infuscated. Halteres relatively long, stem yellow, knob infuscated. Legs with the fore coxae darkened, as described; remaining coxae and all trochanters obscure yellow; femora obscure yellow, more blackened outwardly to form a more or less distinct, nearly terminal ring, the extreme tips again pale; tibiae dark brown to brownish black; tarsi black; in some specimens, especially the females, the femora, tibiae and basitarsi are more uniformly paler; in still other specimens, the legs are more darkened. Wings almost uniform pale yellow or subhyaline, unpatterned; stigma very pale yellow, not or scarcely differentiated against the ground; veins pale yellowish brown to yellow. Venation: Sc_1 ending about opposite the origin of R_s , Sc_2 a short distance from its tip; R_s relatively short, subequal to or only slightly longer than the basal section of R_{4+5} , in extreme cases up to twice as long; cell $1st\ M_2$ shorter than any of the veins beyond it; $m-cu$ close to the fork of M .

Abdominal tergites in male black, the first segment more yellowish on sides; extreme caudal border of segments paler; basal two sternites yellow, the remainder black; hypopygium reddish brown to dark brown. Female with the sternites more uniformly obscure yellow or brownish yellow; ovipositor with the cerci long and slender, nearly straight. Male hypopygium (Fig. 2) with the tergite subtruncate across the caudal

border, the usual lobes scarcely evident; setae relatively large but pale and inconspicuous. Basistyle with ventromesal lobe simple; on mesal face of style, distad of the ventral lobe, with a group of about a dozen conspicuous black setae. Dorsal dististyle a strongly curved pale rod, the elongate tip decurved. Ventral dististyle, *vd*, an elongate oval lobe, its area more than twice that of the basistyle; rostral prolongation small, more heavily sclerotized, just before the short blunt apex on outer margin bearing two closely approximated spines that are a little longer than the prolongation itself; on face of prolongation, near base, with one or sometimes two groups of blackened setae, in cases these much less conspicuous to virtually lacking (this condition figured). Gonapophyses, *g*, with mesal-apical lobe large and pale, clublike, produced into numerous scattered pale tubercles or blisters, with fewer, more conspicuous marginal spines.

Holotype, ♂, Apartaderos, Merida, altitude 3,320 meters, September 1942 (*Anduze*). *Allotopotype*, ♀. *Paratopotypes*, 4 ♂ ♂, 2 ♀ ♀.

The nearest ally of the present fly is *Limonia* (*Dicranomyia*) *andicola* (Alexander), with a wide range in the northern Andes (Colombia to Peru and Bolivia). This latter fly differs in the heavily patterned wings, in the coloration of the body and legs, and in the details of structure of the male hypopygium. *L. (D.) patruelis* (Alexander) of Argentina is less closely related.

Limonia (*Geranomyia*) *dstricta* Alexander.

1940. *Limonia* (*Geranomyia*) *dstricta* Alex., Ann. Mag. Nat. Hist. (11) 5: 287-288 (Ecuador).

Hitherto known from Ecuador and Peru. 1 ♀, Tabay, Rio Chama, Merida, altitude 1,800 meters, August 18, 1942 (*Lichy*). Although only the female sex is here represented, I feel relatively certain of the identification, since the species seems to be well-defined on the leg-pattern and in the venation and pattern of the wings.

Limonia (*Geranomyia*) *laudanda* Alexander.

1938. *Limonia (Geranomyia) laudanda* Alex., Journ. N.Y., Ent. Soc., 46: 330-331 (Colombia).

Hitherto known from Colombia (near Bogota, altitude 10,000 feet, in July); new to Venezuela. 1♂, Apartaderos, Merida, altitude 3,320 meters, September 1942 (*Anduze*). The hitherto unknown male agrees closely with the female except in the sexual characters. Male hypopygium with the ninth tergite rather deeply notched medially, the lateral lobes obtuse, provided with coarse setae. Basistyle with ventromesal lobe large, oval. Dorsal dististyle a gently curved blackened rod, the tip narrowed into an acute spine. Ventral dististyle of moderate size, in area about one-half more extensive than the basistyle; rostral prolongation short and stout, its tip obtuse; entire outer surface of prolongation occupied by a long common tubercle that exceeds in length the prolongation itself, at its apex forked into two unequal more slender tubercles, each bearing a long straight spine; one tubercle a little longer than the other but the spines themselves subequal to one another in length and thickness; each spine considerably longer than the prolongation alone; on face of ventral dististyle near base of prolongation a low tubercle bearing about six somewhat stronger and more powerful setae than the normal ones. Gonapophyses with the mesal-apical lobe long and only gently curved, entirely pale.

Limonia (Geranomyia) anduzeana sp. n.

Mesonotum with a broad brown central stripe that is bordered on either side by a slightly narrower silvery stripe; rostrum black throughout, nearly one-half the length or remainder of body; femora obscure yellow, the tips broadly pale yellow with a narrower brown subterminal ring; wings brownish yellow, restrictedly patterned with brown, including a continuous seam along vein *Cu*; *Sc*₁ ending just beyond midlength of *Rs*, the small dark spot at its tip disconnected from the one at origin of *Rs*; male hypopygium with the tergal lobes low; ventral dististyle with rostral prolongation small and slender, the two spines subequal in length to the prolongation, arising from individual but closely approximated small basal tubercles.

Male. — Length, excluding rostrum, about 7.5 mm.; wing 10 mm.; rostrum about 3.8 mm.

Rostrum relatively long, nearly one-half the remainder of body, black throughout; maxillary palpi black. Antennae with scape and pedicel black, the basal flagellar segments a trifle paler, the outer segments black; flagellar segments cylindrical; verticils shorter than the segments. Front and anterior vertex silvery; posterior vertex velvety black with a median obscure gray stripe extending to the occiput; posterior orbits narrowly gray; anterior vertex narrower than the diameter of scape.

Pronotum dark brown above, slightly paler on sides. Mesonotal praescutum with a broad and conspicuous medium brown central stripe, a trifle wider near the suture, bordered laterally by a narrower but conspicuous silvery stripe, most evident when viewed from above; humeral and lateral portions of praescutum paling to greenish, the former a trifle clearer; scutal lobes conspicuously dark brown, the broad median area, together with the scutellum, abruptly greenish testaceous; parascutella restricted, a little more darkened; mediotergite chiefly infuscated, paler laterally. Pleura and pleurotergite uniform greenish testaceous. Halteres greenish, the knob weakly infuscated. Legs with the coxae and trochanters greenish testaceous; femora obscure yellow, the tips broadly pale yellow, preceded by a brown ring that is approximately two-thirds as extensive as the apex; tibiae and tarsi obscure yellow or brownish yellow, the outer tarsal segments blackened; claws with a very strong basal spine. Wings brownish yellow, the costal border a trifle more darkened; a restricted brown pattern, arranged as follows: Supernumerary crossveins in cell *Sc*; origin of *Rs* and fork of *Sc*, these areas very small and entirely disconnected; stigma, its proximal portion paler; cord and outer end of cell *1st M*₂ narrowly seamed, the former connected with the stigmal area by a darkening along vein *R*₂₊₃; conspicuous seams along distal portion

of vein R_3 , the entire length of Cu , and at ends of both Anal veins; veins obscure yellow, darker in the clouded areas. Venation: Sc relatively long, Sc_1 ending just beyond midlength of Rs , Sc_2 near its tip; supernumerary crossvein in cell Sc at near mid-distance between h and the origin of Rs ; cell 1st M_2 subequal in length to vein M_3 beyond it; $m-cu$ a short distance before the fork of M .

Abdomen brownish black. Male hypopygium (Fig. 3) with the tergite, $9t$, transverse, narrowed posteriorly, lateral lobes very low; setae marginal, more abundant on the lobes. Basistyle with ventromesal lobe relatively small, simple. Dorsal dististyle a slightly curved yellow rod, the decurved tip blackened, acute. Ventral dististyle, vd , large and fleshy, its area exceeding twice that of the basistyle; rostral prolongation small, slender; rostral spines two, both from closely approximated small basal tubercles at near midlength of outer face of prolongation; spines subequal, of moderate length, a little shorter than the total length of the prolongation. Gonapophyses, g , with mesal-apical lobe pale, terminating in an acute spinous point. Aedeagus, a , with scattered pale setae on basal portion.

Holotype, ♂, Apartaderos, Merida, altitude 3,320 meters, September 1942 (*Anduze*).

I take great pleasure in naming this distinct species in honor of the collector, Mr. Pablo J. Anduze, who has already accomplished a vast amount of work toward making known the insect fauna of Venezuela. The fly is amply distinct from other regional species that have the same general type of thoracic pattern, differing especially in the coloration of the legs and wings, the details of venation, and in the structure of the male hypopygium. It is perhaps closest to *Limonia* (*Geranomyia*) *callinota* Alexander. Other species of this general group include *L. (G.) carunculata* Alexander, *L. (G.) deliciosa* Alexander, *L. (G.) dominicana* Alexander, *L. (G.)*

eurygramma Alexander, and others. These latter species have *Sc* shorter and with the dark areas at the fork of *Sc* and origin of *Rs* confluent or virtually so.

Limonia (Geranomyia) lichyi sp. n.

General coloration of mesonotum buffy gray, the praescutum with an incomplete but very conspicuous median black vitta and longer more reddish intermediate stripes; antennae black throughout; rostrum relatively short, about one-third the length of wing; halteres relatively long, stem yellow, knob weakly darkened; fore coxae darkened, the others pale; femora obscure yellow, their tips clearer yellow, preceded by a poorly indicated darker ring; wings whitish subhyaline, restrictedly but conspicuously patterned with pale brown, the stigma even paler; dark areas at origin of *Rs* and fork of *Sc* disconnected; *Sc*₁ ending about opposite two-fifths the length of *Rs*; abdomen dark brown, the genital segment and valves of ovipositor more reddish yellow.

Female.—Length, excluding rostrum, about 6.5 mm.; wing 9.3 mm.; rostrum about 3 mm.

Rostrum black, the distal quarter slightly paler, provided with short but conspicuous setulae; palpi black. Antennae black; flagellar segments short-cylindrical, the outer ones more elongate; terminal segment about one-half longer than the penultimate; verticils subequal in length to the segments. Head dark gray, with a lighter gray median stripe extending from the front to the occiput, on the posterior vertex narrowly bordered by darker; anterior vertex a little wider than the diameter of scape.

Pronotum pale brown, darker laterally. Mesonotal praescutum buffy gray, paling to more reddish on sides; a narrow but very conspicuous median black vitta on cephalic two-thirds of sclerite, terminating in an extending point behind; intermediate stripes longer, pale reddish, relatively indistinct against the ground; a short further darkening lies still farther

laterad, about in the position of the outer margin of the normal lateral praescutal stripe; humeral region of praescutum a little more buffy; scutal lobes darkened, especially on cephalo-lateral portions; median region of scutum, with the scutellum, testaceous; postnotum pale, slightly more darkened behind. Pleura with cephalic sclerites darkened, sparsely pruinose, the posterior pleurites, including the posterior dorsal portion of sternopleurite, with the pteropleurite, pleurotergite and meron, somewhat more reddish, sparsely pruinose. Halteres relatively long, stem pale yellow, knob darkened. Legs with the fore coxae conspicuously darkened; remaining coxae and all trochanters pale; femora obscure yellow, with a narrow and poorly indicated darker subterminal ring, the somewhat narrower tips clearer yellow; tibiae and proximal two segments of tarsi obscure yellow, the outer tarsal segments passing into black. Wings with the ground color whitish subhyaline, the prearcular and costal fields slightly more cream-yellow; a restricted pale brown pattern, as follows: Supernumerary crossvein in cell *Sc*; origin of *Rs* and fork of *Sc*, these entirely disconnected; cord and outer end of cell *1st M*₂, the former extended basad along *Rs* for about one-third the length of latter and distal along *R*₂₊₃ to the stigma; vague marginal clouds, largest and most conspicuous on *R*₃ *Cu* and the Anal veins; stigma oval, even paler than the remaining dark areas; *Cu*, distal end of *M* and the veins beyond cord less evidently seamed with pale brown; veins pale brown in the clouded areas, pale yellow in the brightened portions. Venation: *Sc* moderately long, *Sc*₁ ending about opposite two-fifths the length of *Rs*, *Sc*₂ near its extreme tip and much longer; *Rs* fully three times the basal section of *R*₄₊₅; cell *1st M*₂ nearly as long as vein *M*₁₊₂ beyond it; *m-cu* at or close to fork of *M*.

Abdomen dark brown, the extreme caudal margins of the intermediate tergites paler; ovipositor with the genital segment and valves reddish yellow; cerci nearly straight, very slender.

Holotype, ♀, Environs of Chachopo, Merida, altitude 2,800 meters, August 7, 1942 (*Lichy*).

This interesting crane-fly is delicated to the collector, Mr. Rene Lichy, in appreciation of his efforts in making known the species of Venezuela. The species is quite distinct from other described regional members of the subgenus, being most similar in its wing pattern to *Limonia* (*Geranomyia*) *gaudens* (Alexander) and a few other forms closely allied to the latter. It differs most evidently in the pattern of the body, especially the praescutum, the legs and wings, the venation, and the elongate halteres. In the present fly there is no darkening on the wings in the vicinity of the arculus or the humeral crossvein.

Limonia (*Neolimnobia*) *diva* (Schiner), subsp.

1868. *Limnobia diva* Schiner; Novara Reise, Dipt. p. 46 (Brazil).

Schiner described the species from a unique female taken in Brazil. What appear to represent forms of a single species occur over a vast area in Central and South America, including the Greater Antillean Islands. Until more work can be done on these flies, it seems preferable not to designate these forms by separate names. The present material shows the following forms:

Venezuela, Rancho Grande, Edo. Aragua, 1 ♂, 1 ♀, September 5, 1942 (*Lichy*); most similar to the typical form; fore and middle femora with only two clearly defined black rings, the posterior femora with three such annuli. Merida, Paramo Portachuelo, altitude 2,900 - 3,000 meters, August 11, 1942 (*Lichy*), 1 ♂; Merida, Tabay, Rio Chama, altitude 1,800 meters, August 18, 1942 (*Lichy*); pale pattern of fore and middle femora almost lacking, better indicated on the posterior femora where there are two slightly indicated darker rings.

Molophilus (*Molophilus*) *dido* sp. n.

Belongs to the *plagiatus* group; general coloration of mesonotum dark brownish gray, scarcely patterned; antennae short; halteres light yellow; wings with a strong brownish yellow tinge, along the cord with an oblique darkened cloud that virtually crosses the wing; male hypopygium with the basal dististyle a long sinuous rod, strongly bent at near the basal third, the distal half a nearly straight, slender, blackened rod that terminates in about four conspicuous teeth; phallosomic plate unusually small, glabrous, the apex obtuse.

Male.—Length about 5.5 mm.; wing 6.5 mm.; antenna about 1.4 - 1.5 mm.

Female.—Length about 5.5 - 6 mm.; wing 6.5 - 7 mm.

Rostrum brown; palpi dark brown. Antennae relatively short in both sexes, brownish black, the pedicel darker in color than the scape; flagellar segments long-oval, the verticils considerably exceeding the segments in length. Head dark brownish gray.

Pronotum dark brown, the scutellum and pretergites yellow. Mesonotum dark brownish gray, the praescutal interspaces darker, especially in front; humeral and lateral regions slightly more reddish; scutellum not brightened; mediotergite dark, the latero-cephalic borders restrictedly more yellow. Pleura and pleurotergite brownish gray; dorsopleural region yellowish. Halteres light yellow, the knobs even brighter. Legs with the coxae obscure brownish yellow; trochanters slightly brighter; femora, tibiae and basitarsi obscure brownish yellow, the tips of the tibiae narrowly brownish black; outer tarsal segments passing into black. Wings with a strong brownish yellow tinge, the prearcular and costal fields somewhat clearer yellow; stigma and cord conspicuously clouded with brown, appearing as an oblique darkened area that virtually crosses the wing; vein *Cu* distad of cord seamed with brown; veins brown, more yellowish in the brightened fields. Venation: R_2 lying some distance distad of level of *r-m*, the latter subequal

in length to basal section of R_5 ; R_{4+5} shorter than $r-m$; $m-cu$ sinuous, shorter than the petiole of cell M_3 ; vein 2nd A gently sinuous.

Abdomen, including hypopygium, brownish black. Male hypopygium (Fig. 4) with the beak of basisstyle, b , relatively stout. Outer dististyle with the stem longer than either branch, the inner branch about twice as long as the outer one and more slender. Basal dististyle, bd , a long sinuous rod, strongly bent at near the basal third, the outer half a nearly straight slender blackened rod that terminates in about four small denticles, with two or three other smaller points or roughening on the lateral face beyond the bend. Phallosomic plate, p , unusually small, the apex obtuse, surface glabrous.

Holotype, ♂, Apartaderos, Merida, altitude 3,320 meters, September 1942 (*Anduze*). *Allotopotype*, ♀. *Paratopotypes*, 3 ♀ ♀.

In the structure of the male hypopygium, the present fly is most similar to species such as *Molophilus (Molophilus) dirus* Alexander and *M. (M.) persinuosus* Alexander, both of Peru. Both of these have the basal dististyle somewhat as in this insect but with the apical portion quite different, terminating in a long acute spine and bearing a conspicuous lateral spinous point (*persinuosus*) or with numerous setulae at the apex and with a powerful lateral branch at near midlength of style (*dirus*). Both of these latter species have the wings strongly blackened and without pattern.

Molophilus (Molophilus) facinus sp. n.

Belongs to the *plagiatus* group; general coloration of mesonotum pale brown or brownish testaceous; antennae short, the basal segments yellow, the outer ones passing into brownish black; pleura yellow, with a conspicuous blackened area over the dorsal sclerites; femora and tibiae light brown, the tips narrowly more infuscated; wings yellow with a very inconspicuous brown clouding along the cord; male hypopig-

ium with the outer arm of outer style having about three small denticles along its mesal edge; basal dististyle a long, gently curved rod, at about one-third the length bearing a long slender spine; outer half of style with about 30 spines, the outer ones stouter and more appressed, the more basal spines slender and setoid in appearance.

Male.—Length about 5 mm.; wing 5.4 mm.; antenna about 1.4 mm.

Rostrum brownish yellow, the dorsal surface with long dark-colored setae; palpi brownish black. Antenna relatively short; scape and pedicel yellow, flagellum passing through brown to brownish black; basal flagellar segments suboval, with truncated ends, the outer segments more elongate; verticils of the more proximal segments very long and conspicuous. Head light yellow, the central portion of posterior vertex a trifle more darkened.

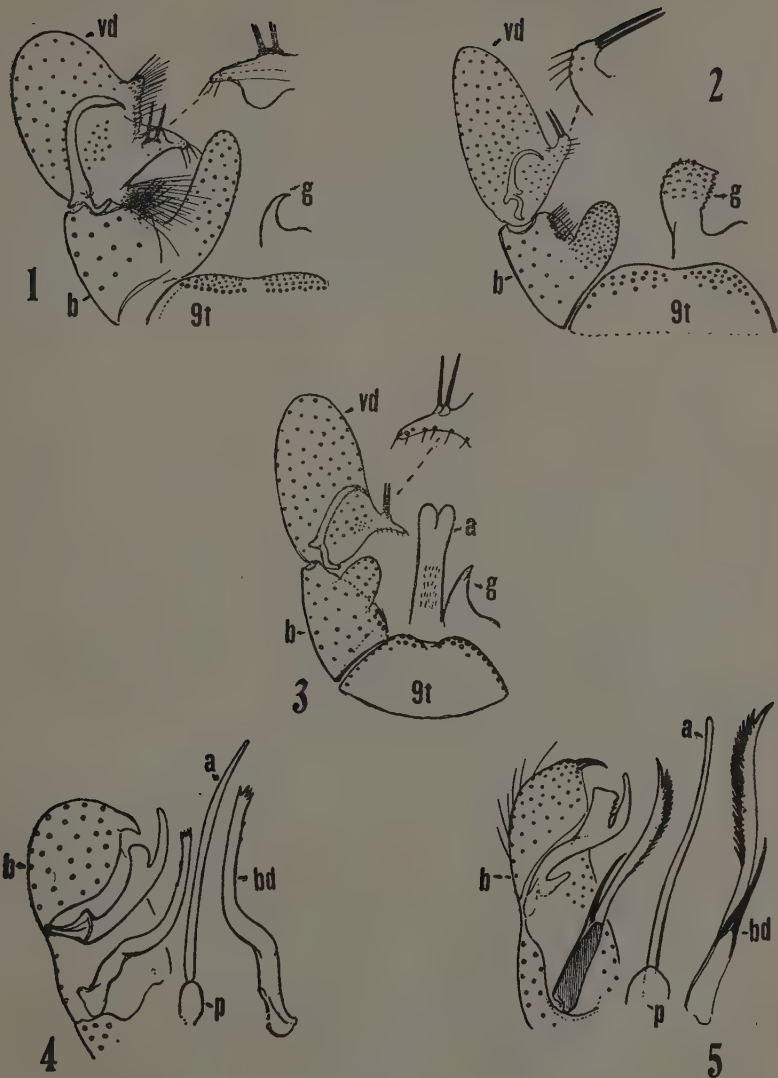
Pronotum and pretergites yellowish white. Mesonotal praescutum with the very restricted ground color light fulvous, the disk chiefly occupied by three confluent light brown stripes, the humeral and lateral regions yellowish white, restricting the ground to subhumeral areas surrounding the pale brown pseudosutural foveae; posterior sclerites of notum light brownish testaceous, the median area of scutum slightly pruinose; posterior border of mediotergite and adjoining portion of pleurotergite darker brown. Pleura brownish yellow, with a conspicuous blackened area on the anepisternum and adjacent part of pteropleurite. Halteres yellow, the knobs even brighter. Legs with the coxae and trochanters light yellow; femora and tibiae light brown, the tips narrowly more infuscated; tarsi brownish black, the extreme proximal end of basitarsus paler; fore tibia with a feebly dilated subbasal brown ring enclosing an elongate-oval tympanum-like structure. Wings yellow, the prearcular and costal fields somewhat clearer yellow; a very inconspicuous brown clouding on the anterior and again on the posterior cords, best

indicated by faint clouds surrounding the slightly darkened veins; veins yellow, the long macrotrichia pale brown. Venation: R_2 lying just beyond the general transverse level of $r-m$; petiole of cell M_3 about one-third longer than the oblique $m-cu$; vein $2nd\ A$ sinuous, its end about opposite one-fourth the length of $m-cu$.

Abdomen light brown, the lateral line a trifle darkened; hypopygium yellow. Male hypopygium (Fig. 5) with the beak of basistyle, b , strongly curved, long and slender, black. Outer dististyle with the stout outer arm provided along its mesal edge with three or four small denticles. Basal dististyle, bd , a long, gently curved rod, at near one-third the length bearing a strong lateral spine that is approximately one-half the length of style beyond the point of its insertion; style terminating in a strong axial spine, the distal half along inner margin with numerous spines, the outer ten closely applied to one another and becoming progressively more appressed toward the outer end; basad of these outer spines with about twenty even more slender appressed spines or spinous setae. Aedeagus, a , elongate.

Holotype, ♂, Merida, Rio Chama, altitude 1,800 meters, August 18, 1942 (*Lichy*).

The most similar species are *Molophilus* (*Molophilus*) *honestus* Alexander, of Argentina, and *M. (M.) paganus* Alexander, of Peru, both of which have the male hypopygia somewhat as in the present fly but differing in all details. The former species (*honestus*) has the lateral spine of the basal dististyle much smaller and with the spines of the outer portion of style fewer in number, the more proximal ones not conspicuously more slender and setiform as in the present fly; the latter species (*paganus*) has the beak of the ventral lobe of basistyle powerful, cultriform; basal dististyle with the outer spines about equally numerous but with the more proximal ones shorter and even stouter than the outer ones.



EXPLANATION OF TEXT — FIGURES 1-5

- Fig. 1. — *Limonia (Dicranomyia) bicomifera* sp. n.; male hypopygium.
 Fig. 2. — *Limonia (Dicranomyia) meridicola* sp. n.; male hypopygium.
 Fig. 3. — *Limonia (Geranomyia) anduzeana* sp. n.; male hypopygium.
 Fig. 4. — *Molophilus (Molophilus) dido* sp. n.; male hypopygium.
 Fig. 5. — *Molophilus (Molophilus) facinus* sp. n.; male hypopygium.
 (Symbols: *a*, aedeagus; *b*, basistyle; *bd*, basal dististyle; *g*, gonapophysis; *p*, phallosomic plate; *t*, tergite; *vd*, ventral dististyle).

RESUMEN

Se describen las siguientes especies nuevas de Tipulidos: *Holorusia (Holorusia) plagifera*, *Limonia (Dicranomyia) bicomifera*, *Limonia (Dicranomyia) meridicola*, *Limonia (Geranomyia) anduzeana*, *Limonia (Geranomyia) lichyi*, *Molophilus (Neolimnobia) diva*, *Molophilus (Molophilus) dido*, *Molophilus (Molophilus) facinus*. Estos insectos son de las regiones andinas de Mérida y Táchira y de la Cordillera de la Costa.

CONTRIBUCION AL ESTUDIO DE LA PARASITOLOGIA ANIMAL EN VENEZUELA

XIV. Gastrofilos de los equinos de Venezuela (*)

por

E. G. Vogelsang y P. Llamozas González (**)

La presencia de larvas de *Gastrophilus* de equinos en Venezuela fué constatada en el año 1939 por uno de nosotros (9). Fueron introducidos al país en equinos de procedencia argentina y mexicana. Puede decirse que hasta esa época Venezuela se hallaba libre de este parásito, lo que pudimos constatar anteriormente en buen número de equinos autopsiados; y por los trabajos de nuestros dos entomólogos, Núñez Tovar (2) y R. González Rincones (8); hoy cuenta con un azote más para la producción equina que parece aumentar constantemente, especialmente en Maracay y sus alrededores. Las especies cuyas larvas hemos constatado en el tracto intestinal de equinos en el Servicio de Haras y Remonta y Estación Zootécnica de Maracay pertenecen a tres especies del género *Gastrophilus*:

1. *Gastrophilus intestinalis* (de Geer, 1776).
sin *Gastrophilus equi* (Clark, 1797).
2. *Gastrophilus haemorrhoidalis* (L., 1761).
3. *Gastrophilus nasalis* (L., 1761).
sin. *G. veterinus* (Clark, 1797).
" *G. duodenalis* Schwab.

(*) Las contribuciones anteriores fueron publicadas en la Revista de la Policlínica Caracas y en la Revista de Medicina Veterinaria y Parasitología del Ministerio de Agricultura y Cria, Caracas, Venezuela.

(**) Trabajo del Servicio Veterinario del Ejército Nacional, Caracas, Venezuela. Venezuela.

Estas larvas se hallan en la porción digestiva del estómago de los equinos menos el *G. nasalis* que lo es raramente, se halla especialmente en el duodeno. La presencia de larvas las hemos constatado en equinos autopsiados en el Servicio de Haras y Remonta que nacieron en el país y con varios años de permanencia en el Ejército Nacional y en el Campo experimental de Zootécnica de Las Delicias, lugares a donde fueron llevados en el año 1936 y 1938 equinos de procedencia extranjera.

1. Eq. (Servicio Haras) 1-X-38. — *Gastrophilus haemorrhoidalis* (L., 1761).
2. Eq. (Estación Zootec.) 16-XI-38. — *Gastrophilus intestinalis* (de Geer, 1776).
3. Eq. (Estación Zootec.) 1-XI-38. — *Gastrophilus nasalis* (L., 1761).
4. Eq. (Estación Zootéc.) 6-XI-38. — *Gastrophilus nasalis*.
5. Eq. (Estación Zootec.) 15-XI-38. — *Gastrophilus nasalis e intestinalis*.
6. Eq. (Ser. Haras) 1-VI-40. — *Gastrophilus intestinalis*.
7. Eq. (Ser. Haras) 22-IX-40. — *Gastrophilus intestinalis*.
8. Eq. (Ser. Haras) 16-I-41. — *Gastrophilus intestinalis*.
9. Eq. (Ser. Haras) 10-XI-42. — *Gastrophilus nasalis*.
10. Eq. (Ser. Haras) 5-XII-42 — *Gastrophilus nasalis*.

Como se puede ver por los hallazgos parasitológicos la frecuencia es casi igual de *Gastrophilus intestinalis* y *nasalis*, hallándose en un caso asociadas las dos especies. Un solo caso parasitado por *G. haemorrhoidalis*. El número de parásitos hallados fué siempre muy variable en cantidad y en formas de desarrollo siendo casi imposible determinar gran número de larvas por el tamaño, lo que produce gran confusión para la determinación, lo que probablemente le sucedió a Brauer (1) según Geddoelst (4) en su trabajo sobre el *G. haemorrhoidalis*. No hemos hallado hasta ahora ningún ejemplar de *Gastrophilus inermis* Brauer, lo que no dudamos que pueda aparecer en cualquier momento.

En Sur América han sido determinados para la República Argentina, por Wernicke de 1886-88 el *G. equi*, mencionando Wolffhügel (10) en 1911 que el único *Gastrophilus* que para-

sitaba los equinos argentinos era el *G. nasalis* y dice que el *G. equi* puede haber sido un error de determinación. Para el Brasil, Pinto (5) señala *G. veterinus* sin. del *G. nasalis*, descrito por v. Ihernig, R. en 1930.

Pinto hace notar que según sus observaciones, las de A. Lutz y de R. von Ihering ciertas especies de *Gastrophilus* se están diseminando en varios estados del Brasil. Para los Estados Unidos de Norte América se ha indicado la presencia de *G. intestinalis*, *haemorrhoidalis* y *nasalis*, según Schwartz, Imes y Wright (6) creemos por otros también el *inermis*. El número de larvas de *Gastrophilus* hallados varía lo mismo que el estado de evolución de las mismas, en ciertos equinos se hallan larvas del mismo tamaño y al parecer de la misma edad, y en cambio en otros, de distinto tamaño y cantidad, en un equino autopsiado en Maracay hallamos en el estómago 321 larvas de distintos tamaños de *Gastrophilus intestinalis*, en otro equino autopsiado en la Escuela S. de Veterinaria de Caracas sólo hallamos tres larvas de *G. intestinalis*. El origen de este equino y su probable lugar de infección no hemos podido averiguar. El máximo de casos de equinos parasitados lo fueron entre los meses de Julio y Diciembre.

RESUMEN

Se describen los siguientes *Gastrophilus* para los equinos de Venezuela: *Gastrophilus intestinalis*, *haemorrhoidalis* y *nasalis*. La presencia de estos parásitos ya había sido señalada en el país por Vogelsang en 1939, a raíz de la importación de equinos extranjeros parasitados, éstos lograron aclimatarse y extenderse rápidamente.

SUMMARY

Reference is made of the incidence of *Gastrophilus intestinalis*, *G. haemorrhoidalis* and *G. nasalis* among horses in Venezuela. These parasites previously unknown in the country were introduced with imported animals from Argentine and Mexico and now seem to be firmly established in the region of Maracay, Estado Aragua.

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ESTUDIOS DE ENTOMOLOGIA MEDICA EN EL ESTADO MERIDA (VENEZUELA)

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El presente trabajo se basa en investigaciones practicadas durante el mes de septiembre de 1942 en el Distrito Rangel y durante agosto y septiembre de 1943 en los Distritos Sucre y Tovar del Estado Mérida. Para descartar en informes subsecuentes toda referencia al aspecto médico de los trabajos, he creído conveniente hacer una reseña de las enfermedades tratadas, especificando su distribución geográfica regional y su incidencia.

Practiqué 231 exámenes de sangre en el Distrito Tovar. En 167 casos hice además de los frotis para paludismo y fiebre recurrente, la Prueba Rural B-R, 17 reacciones Weil-Félix y una reacción al Formol.

He aquí las enfermedades relacionadas con insectos que encontré:

PALUDISMO.—El Dr. José Quintini en su “Contribución a la Geografía Médica del Ferrocarril de Santa Bárbara a El Vigía, en los Estados Zulia y Mérida”, leído en la tercera sesión ordinaria del V Congreso Venezolano de Medicina celebrado en Maracay en 1926, señaló oficialmente por primera vez, la existencia del paludismo en el Estado Mérida. A pesar de ello, al hablar del Estado Mérida desde el punto de vista mé-

dico, nadie piensa en paludismo, sino en otras dolencias de clima templado o frío, ya que dicho Estado, a excepción de una faja de terrenos bajos, bastante extensa por cierto, está situado sobre la parte más alta del macizo andino venezolano. Casi la mitad de su territorio puede considerarse como de páramo con algunos sectores cubiertos de nieve perpetua.

Como lo indicó el Dr. Quintini, la región de El Vigía está azotada por el paludismo, pero esa epidemia abarca hoy día, la faja de terrenos bajos de los Distritos Tovar y Sucre. Para dar una idea más exacta, considérese toda la zona desde los límites con el Estado Zulia hasta una altura de 1,000 mts. sobre el nivel del mar. Por los valles de los ríos Escalante y Chama, la penetración del paludismo en el Estado se hace cada día más notable. Esta penetración corre paralela a la difusión de los transmisores quienes encuentran fácil acceso a los valles más altos por las cuencas de esos ríos y por las de sus afluentes principales, el Mocotíes y el Guaruríes, a medida que progresan los desmontes para el fomento de haciendas agrícolas y pecuarias.

La zona palúdica del Estado es totalmente rural a excepción del pueblo de El Vigía. Los exámenes de sangre hechos en la Unidad Sanitaria de Tovar comprueban que en las poblaciones situadas a mayores alturas de 950 mts., no hay paludismo autóctono. En cambio es raro el habitante de "Tierra Llana" que no haya sufrido la enfermedad.

La estación lluviosa no está bien demarcada. Los cambios bruscos de temperatura debido a las condiciones topográficas impiden la constancia climatológica por lo cual no se puede determinar exactamente la época de mayor población anofelina. Para la fecha de mi viaje cayeron dos fuertes aguaceros, las montañas tenían apariencia de fresca pero las partes bajas mostraban haber sufrido algo por sequías. Mi llegada a Caño del Tigre en septiembre coincidió con un brote agudo de paludismo, pero al decir de los habitantes de toda la región, no se dan cuenta de periodicidad palúdica. Para ellos hay paludismo todo el año.

7 45 Pude apreciar la presencia de los siguientes anofelinos hasta alturas de 500 mts.: *argyritarsis*, *eiseni*, *neomaculipalpus*, *strodei*, *oswaldoi* y *pseudopunctipennis*. Entre los 500 y 1.000 mts. hice capturas de *argyritarsis*, *eiseni*, *neomaculipalpus* y *pseudopunctipennis*. Entre los 1.000 y los 2.500 mts. las capturas fueron *argyritarsis*, *boliviensis* y *pseudopunctipennis*. Por primera vez pude observar hábitos andrófilos en *eiseni*, anofelino que hasta la fecha había sido considerado como zoófilo. A excepción del *A. boliviensis*, representante del subgénero *Kerteszia*, cuyos representantes han sido culpados en otras partes de transmitir paludismo y de *strodei* y *oswaldoi*, no capturé especies de las que en nuestro país son consideradas como trasmisoras, sin embargo, en la ausencia de *albi-* 30 160 *manus* y *darlingi*, algunas de las especies citadas deben ser responsables del paludismo en aquella región. Mis capturas rindieron un alto porcentaje de *oswaldoi*. 10 400

Con referencia al paludismo en sus formas clínicas, existen ciertas condiciones que hacen imperativo el uso del microscopio, pues la zona, además de ser palúdica está en parte, azotada por la fiebre recurrente. Las formas vistas por mí fueron de *vivax* y *falciparum*, esta última en menos grado. El itinerario no me permitió destinar más tiempo a una determinación más exacta de la incidencia de los parásitos.

— refugio fern 81 178
FIEBRE RECURRENTE. — Desde hace tiempo se conoce como endémica esta enfermedad en algunas regiones del Estado Mérida. De acuerdo con mis investigaciones, basado en algunos exámenes de sangre, en la Prueba Rural B-R y en la presencia del trasmisor, concluyo en que la zona endémica está situada entre los 500 y 1.500 mts., en una faja que parte del Distrito Jáuregui del Estado Táchira (donde también hay fiebre recurrente) abarcando los Distritos Tovar y Sucre hasta el de Justo Briceño en el Estado Mérida. El *Ornithodoros venezuelensis* (hemos obtenido por la conservación de este nombre, al que estamos acostumbrados, pese a que algunos autores discuten su validez) está ampliamente distribuido en

toda la región. En las zonas rurales no hay casa donde no se encuentren fácilmente estos argásidos. En la población de Zea puede decirse que el 95% de las casas están infestadas y en la de Tovar, en su parte suburbana acontece lo mismo.

Con referencia a su incidencia, parece que la enfermedad tiene ciclos periódicos de aparición. Entre los que han sufrido la enfermedad hay cierta inmunidad pero los extraños que no se protegen se infectan rápidamente. Como anoto en el párrafo referente al paludismo, el examen de laboratorio se hace indispensable ya que la enfermedad tiene una sintomatología algo confusa.

TIFUS EXANTEMÁTICO. — El móvil principal de mi viaje fué el de practicar la reacción de Weil-Felix entre los sobrevivientes de una epidemia de origen desconocido ocurrida en el Distrito Tovar en 1941. Esta epidemia tuvo una mortalidad de 37%. Por el informe que presentó en aquella oportunidad el médico regional se sospechó Dengue y Tifus exantemático. La obtención de informes fidedignos me hizo recordar la dificultad con qué tropezamos el Dr. Potenza y yo en el Estado Bolívar al tratar de reconstruir los antecedentes de un caso de Kala Azar. Habían transcurrido ya dos años desde la epidemia y los recuerdos, aunque trágicos, son confusos en las mentes campesinas de modo que sólo obtuvimos pocos datos. En mi encuesta personal pude obtener lo siguiente: la enfermedad no tenía una sintomatología uniforme, en algunas casas por ejemplo los enfermos presentaban erupciones eritematosas, en otras no. El informe del médico habla de exantemas hemorrágicos; ese dato lo confirma una sola persona superviviente, la mayoría dice no haber tenido erupción de ninguna clase y en cuanto a las fiebres que sufrieron, algunos hablan de fiebres continuas, otros de fiebres intermitentes.

Como se pensó en Dengue, me dí a la tarea de recolectar los posibles transmisores. El *Aedes aegypti* sólo lo encontré en las zonas urbanas de Tovar, Zea y Santa Cruz de Mora. En zonas rurales sólo encontré *Aedes argyrites*, hembras de un

Aedes que bien puede ser *scapularis* o *euplocamus* y hembras de otra especie que no puedo afirmar sea *dominicii* o *sexlineatus*. Para la determinación exacta hacen falta las larvas de la primera especie y los machos de la segunda, y yo no obtuve ni machos ni larvas de estas dos especies. Creo que cualquiera de las especies citadas hubiera podido servir de trasmisor en ese caso; pero hay dos cosas que contribuyen a descartar la posibilidad de Dengue. Primero la mortalidad por Dengue es considerada nula si no se presenta con complicaciones de otra naturaleza y segundo que el limite vertical para la dolencia no alcanza los 1.000 mts.

Como anoté al principiar sobre este tema, el informe o antecedente hacían pensar en Tifus exantemático, por lo cual practiqué 17 reacciones de Weil-Felix (únicos pacientes supervivientes a quienes pudo localizarse, pues otros no pudieron examinarse). Todas fueron negativas al 0 X 19. El Dr. L. Bri-ceño Iragorrry, a quien he consultado sobre el particular, me informó que, apartando la posibilidad de una reacción negativa debida al tiempo transcurrido es posible que se trate de otra rickettsia que no aglutine al Proteus empleado. Fuera de los posibles transmisores: *Pediculus capitis*, *P. corporis* y *Amblyoma cayennensis* encontré en la región abundantes *Cimex hemipterus* y *Ornithodoros venezuelensis*.

Complementé los exámenes con la Prueba Rural B-R con resultados dudosos en su mayoría y algunas reacciones francamente positivas.

Aunque el informe sobre el brote de fiebres de 1941 no llegó a una conclusión definitiva sobre la naturaleza y origen de la misma, es conveniente recordar que la fiebre recurrente es endémica en esta región, que los transmisores se encuentran en abundancia y por otra parte las condiciones higiénicas de las viviendas son factores de una incidencia no despreciable en la diseminación de la enfermedad. Llama la atención que Sir Patrick Manson-Bahr en su Tropical Diseases, describe una forma de fiebre recurrente cuyos síntomas concuerdan

grandemente con la enfermedad en cuestión y aunque la mortalidad por dicha enfermedad oscila alrededor del 6%, muy bien puede suceder que diversas circunstancias, cuyo análisis por razones obvias no es posible hacer, hayan influido aumentando dicho porcentaje. Se trata desde luego de conjeturas y como tales deben tomarse.

CÁRATE. — No es de dudar que los médicos que han ejercido en el Estado Mérida, han visto casos de esta enfermedad, pero hasta la fecha no se ha publicado nada al respecto. La zona de Quebrada Mejías está infestada en alto grado y distribuidos por el Distrito Tovar se encuentran casos aislados de enfermos con manchas hipercrómicas moradas o azules y enfermos con manchas acrómicas. Vi también un enfermo con manchas acrómicas muy antiguas y manchas azules relativamente recientes. Todos mis exámenes en caratosos dieron la reacción positiva a la Prueba Rural B-R.

Después de haber visitado las zonas caratógenas del Estado Barinas donde se tiene al carampancho o empeine como lesión inicial, me pareció curioso no encontrar en la región de Tovar, esa manifestación. Lo que sí es bastante común, es la discromia producida por hongos que también llaman en Mérida "melancolia".

Teniendo presente la posibilidad de que fueran los simúlidos los transmisores de esta enfermedad hice cuantas colecciones pude. Fuera de las especies: *lutzianus*, *paraguayensis*, *metalicum* y *bicoloratum* (esta especie fué obtenida por mí por primera vez en Venezuela en setiembre de 1942) pude obtener de pupas dos especies más que aún no están determinadas. Por otra parte pude apreciar un límite altitudinal de 2.300 mts. para los simúlidos en Venezuela, con el hallazgo de pupas en una quebrada del páramo de Bailadores.

BUBA. — Esta enfermedad está ampliamente repartida en algunos sectores del Distrito Tovar especialmente en las regiones llamadas de "Tierra Llana" en lugares como Caño del

Tigre, Caño Azul y Caño Blanco. La reacción "B.R." nuevamente ayudó en el diagnóstico, pues a menudo se encontraron personas con lesiones ocultas que por vergüenza negaban haber sufrido la enfermedad. Estos en su mayoría habían sido mal tratados por personas inexpertas.

Pude hacer recolección de numerosos Chloropidos, algunos de los cuales se consideran como transmisores de la enfermedad.

ENFERMEDAD DE CHAGAS. — No puedo decir con certeza que exista esta enfermedad en Mérida ya que no tuve oportunidad de practicar xenodiagnósticos. Sólo una enferma de Caño del Tigre presentaba algunos de los síntomas de la enfermedad, además de manifestaciones externas como edema de los párpados y de la frente. Por otra parte, de los muchos *Rhodnius prolixus* coleccionados cuyos intestinos fueron examinados, encontré dos ninfas pre-adultas que contenían flagelados no determinados.

Fuera de esta especie capturé una ninfa repleta de sangre (que desgraciadamente murió) de una especie desconocida para mí.

Referente a los hábitos de los reduvidos hice una observación bastante curiosa, un caso de alimentación sobre un *Ornithodoros* repleto de sangre. Ya sabíamos de casos de canibalismo entre reduvidos de una misma especie.

LEISHMANIA. — Esta es una enfermedad bastante común en la región de Estanques. Aunque hay casos del tipo cutáneo-mucoso, la forma cutánea fué la que observé con más frecuencia.

De mis colecciones la más abundante fué la de flebotomos los cuales se consiguen desde "Tierra Llana" hasta 1.500 mts. Estos hematófagos comunmente llamados "angoletas" son abundantes en los bosques y haciendas y fueron capturados muchos hasta en la zona urbana de Zea.

GENERALIDADES. — Espero próximamente dar una relación más detallada de mis colecciones y también presentar los informes de los colaboradores a quienes he enviado material de estudio. El doctor Ewing, del U. S. National Museum de Washington recibirá las pulgas. El doctor Rozeboom de Johns Hopkins University, Baltimore, recibirá los flebotomos y el doctor Fairchild, del Gorgas Memorial Laboratory de Panamá recibirá los simúlidos. He reservado para mí, la fauna culicidiana y los pocos ejemplares de ixodídeos y reduvídeos coleccionados, para próximos informes.

SUMMARY

A preliminary account is given of the incidence of several insect borne diseases endemic in the State of Merida, Venezuela. The second part consisting of the account of the Culicidae will appear in the following number of the Boletín and in subsequent numbers, an account of the Psychodidae, Siphonaptera, Simuliidae, etc., will be given by the specialists in charge of the insects.

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DOCUMENTS POUR SERVIR A L'ETUDE DES
SPHINGIDAE DU VENEZUELA (Lépid. Hétéro.)

(3e. Note)⁽¹⁾

UNE ETRANGE ABERRATION ♀ DE *Herse cingulata* F.

par

René Lichy,

5 Parque Sanabria.

Caracas.

Une ♀ aberrante fut prise une nuit, à la lumière, en compagnie de plus de 25 autres *Herse cingulata* normaux et d'un spécimen très frais de l'aberration *decolora* Edw. Cette nuit-là, envahie d'une brume épaisse, fut une nuit splendide pour la chasse aux sphinx. C'était le 4 août 1940, à "Rancho Grande" (1.100 m. d'alt.), dans ces forêts encore si peu explorées de la Cordillère du Littoral de l'Etat Aragua.

J'ai observé bien plus de 200 exemplaires vénézuéliens de *H. cingulata* et je puis dire que cette ♀ est la seule qui présente des dessins aussi curieusement modifiés. Aucun texte, à ma connaissance, ne fait mention d'une anomalie aussi singulière. Je propose donc, pour cette raison, le nom de *tukurine aber. nov.* C'est bien une aberration; cette ♀ n'est, ni une race locale, ni une forme saisonnière.

(1) Les deux notes précédentes ont été publiées dans le vol. II (1943) du "Bol. Ent. Venez.", la 1ère. le 31-III, et la 2e. le 30-VI.

C'est évidemment une mauvaise coutume de surcharger une espèce de noms, pour chaque tache aberrante ou pour chaque couleur un peu différente—je trouve, par exemple, inutile et même préjudiciable de donner un nom à chacune des nuances de la gamme de roses, comprises entre le blanc rosé très pâle de l'aberration *decolora*, jusqu'au rose très vif de certains individus—mais il n'en est pas moins certain qu'une aberration aussi remarquable et qui semble bien un cas unique, mérite un nom.

Si mon exemplaire n'est pas absolument frais, il est, du moins, en bon état de conservation—on peut s'en rendre compte par les photos adjointes. L'âge donc, n'a guère pu modifier le papillon.

En voici la description:

♀ : longueur d'aile antérieure: 42 mm., envergure: 89 mm., longueur de la spiritrompe: 86 mm. (la ♀ témoin de la photo, provient également de "Rancho Grande" et fut capturée le 5-VIII-40).

DESSUS. — *Aile antérieure*: en la comparant avec l'aile d'une ♀ normale, on observe, non seulement un effacement des dessins, mais aussi un léger déplacement de tous les dessins postmédians vers le côté proximal. C'est ainsi que les taches submarginales et les lignes postmédianes se trouvent proportionnellement plus éloignées du bord externe, que chez les exemplaires normaux. La ligne postmédiane interne gris-noir de *cingulata cingulata*, traverse l'aile au niveau de la tache réniforme chez *cingulata tukurine*; elle est donc devenue ici, par sa nouvelle position, une ligne médiane. La tache réniforme est très réduite; elle affecte plutôt la forme d'une lunule très claire, presque blanche, entourée d'une aire gris brun foncé, qui ne semble jamais exister chez *cingulata* ♀ typique. Le saupoudré blanc de l'aile est aussi beaucoup moins important—mais on peut admettre qu'il a pu disparaître, en partie, au cours du vol.

Aile postérieure: beaucoup plus aberrante que l'aile antérieure. La bande noire antéterminale est si large qu'elle a projeté la bande postmédiane blanc rosé vers le centre; la bande médiane noire est donc considérablement réduite du côté antérieur; sur le bord abdominal, elle se fond intimement avec la bande noire antémédiane, absorbant complètement en cet endroit la bande rosée située, chez *cingulata cingulata*, entre les bandes antémédiane et médiane; le coloris rose n'apparaît plus, au niveau de la cellule, que comme une tache diffuse, rose pâle, qui se fond dans la large plage moirée qui, chez les ♀ ♀ normales, est strictement limitée au bord costal. La base de l'aile est rose clair.

DESSOUS, entièrement différent de *cingulata* typique. On y peut, en effet, constater un complet effacement des trois lignes médianes sinueuses des deux paires d'ailes, qui ont ainsi un aspect unicolore presque absolu, surtout aux antérieures, où il ne subsiste qu'un amas, à peine visible, d'écailles brunâtres entre les nervures 4-5 et 5-6, les ailes postérieures conservant un léger éclaircissement médian. Seule, tranche sur le fond gris brun des ailes postérieures, une tache ovale, baso-abdominale, blanche entourée de brun-noir. Il est très important de faire remarquer ici, que le dessous des ailes est beaucoup mieux conservé encore que le dessus; la disparition des dessins ne provient certainement pas du frottement provoqué par le vol.

CORPS. — La seule différence à noter est un éclaircissement du collier, qui reste de la même couleur gris brun que le thorax et les ptérygodes; il ne présente donc pas cette tonalité noirâtre, si particulière chez *cingulata cingulata*. Le rose de l'abdomen est très vif.

1 ♀ (H. T.), ma collection. Provenance: "Rancho Grande" (Est. Aragua), 1.100 m., Vénézuéla septentrional-central, 4-VIII-1940.

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(cf. également les ouvrages cités dans les notes 1 et 2).

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RESUMEN

Se describe *Herse cingulata tukurine*, aberración nueva de la conocida esfinge *Herse cingulata* F., procedente de Rancho Grande en el camino de Maracay a Ocumare de la Costa, Estado Aragua.



- 1.— *Herse cingulata cingulata* F. ♀ (dessus).
 2.— *Herse cingulata tukurine* aber. nov. ♀ (dessus).



- 3.— *Herse cingulata cingulata* F. ♀ (dessous).
 4.— *Herse cingulata tukurine* aber nov. ♀ (dessous).
 (Réduit près d'un tiers).

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NEUROPTERA OF NORTHERN SOUTH AMERICA

by

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PART II

MYRMELEONIDAE

The Myrmeleonidae of America can be arranged in four subfamilies. These are distinguished as follows:

- 1—In the fore wings the second anal vein runs in a fairly even curve and is connected to the third anal vein by a short cross-vein or united to it for a point; the radial sector usually arises before the forking of cubitus; in the hind wings the number of cross-veins before the origin of the radial sector varies from one to five, but most often three..... *Dendroleoninae*.

In the fore wings the second anal vein runs up to and close beside the first anal vein, and then at an angle turns down and is united with the third anal for a distance 2

- 2—In hind wings but one (rarely two) cross-veins before the origin of the radial sector, the latter arising before the forkings of cubitus..... *Macronemurinae*.

In hind wings four or more cross-veins before the origin of the radial sector, the latter usually beyond forking of cubitus; antennae well separated at base.... 3

- 3—Tibial spurs scarcely curved, rarely longer than the basitarsus; hair on thorax and legs short; sense-hair at base of front femur not as long as the femur; body rather slender..... *Myrmeleoninae*.

Tibial spurs much curved or bent; hair on thorax, pleura, and legs very long, usually white; sense-hair at base of femur as long as femur; body much more stout..... *Acanthaclisinae*.

DENDROLEONINAE

Two tribes are represented in South America, separated as follows:

In hind wing the anal runs parallel to the cubitus beyond middle of wing, thus no cubital fork reaching margin..... *Dimarini*.

In hind wing the anal ends before middle and a distinct cubital fork..... *Brachynemurini*.

The Dimarini (genus *Dimares*) has, so far, not been taken in northern South America.

The Brachynemurini contain two subtribes as follows:

In hind wing three (or four) cross-veins before radial sector; in fore wing usually four or five (sometimes fewer) cross-veins before radial sector; in hind wing the anal runs parallel to cubital fork for some distance and several cross-veins connecting them.....
..... *Brachynemurina*.

In hind wing but two cross-veins before radial sector, in fore wing but three cross-veins before radial sector; in hind wing the anal at most runs parallel to cubital fork for a short distance, rarely more than two cross-veins connecting them, often none..... *Austroleonina*.

BRACHYNEMURINA

- 1—In fore wing the banksian line starts just above the medius and runs out toward tip twice as near rhagma as stigma; four cross-veins before radial sector in hind wing..... *Amazoleon*.

In fore wing the banksian line (if present) arises from an upper fork of the first branch of radial sector and running out passes more nearly through the middle of the branches of radial sector; in male a pelotte on on basal lobe of hind wing..... 2

- 2—In fore wing the anal vein runs parallel to the cubital fork for a distance greater than the width of wing at forking of cubitus..... *Ameromyia*.

In fore wing the anal vein runs parallel to cubital fork for less than the width of wing at forking of cubitus; last joint of labial palpi not swollen... *Nemotolus*.

Nemotolus gen. nov.

Related to *Hesperoleon*, but the male has on the edge of the basal membrane of hind wings a projection or pelotte with a swollen head; no white macrochaetae on front coxae or femora. In hind wing three (or four) cross-veins before radial sector, in fore wings usually three or more before radial sector; in hind wing the anal vein runs parallel to cubital fork for more than one-half width of wing at that point. Abdomen of male very long; spurs about equal, two to two and one-half joints.

Type *Myrmeleon protensus* Gerst.

Ameromyia alterna Navas is a synonym.

I have not seen *Nemotolus protensus* from northern South America, but it is known from Brazil, so may extend to Surinam.

Amazoleon modestum sp. nov.

Face dull grayish, vertex and a spot between antennae dark a median pale line on posterior part; antennae yellow-

ish below, brown above, basal joint almost black above; pronotum dark, a narrow pale stripe almost interrupted near middle, sides pale, chiefly behind; lateral lobes of meso and metanotum mostly dark, rest mostly gray or sericeous, the scutelli with median line and the hind border paler.

Abdomen mostly pale on basal half, toward tip becoming dark, and last few segments nearly black, above and below with long white hair; femora pale, rest of legs brownish to nearly black on tarsi, claws reddish, hair and bristles black.

Wings hyaline, veins mostly pale brown, interrupted with white, many cross-veins white in middle, dark at ends, the dark sometimes spreading out to make a spot along the vein, this is chiefly along the cubitus and first anal vein, also along the hind margin and the marginal forkings, which beyond the middle tends to show a dark border; the rhexma with a brown spot covering four cross-veins; two or three other cubital cross-veins wholly dark, and broadly dark bordered along cubitus; the stigma pale yellowish, the veins enclosed are heavily brown.

In the hind wings the veins are dark, the subcosta pale, the radius and some cross-veins behind are interrupted with pale.

The fore wings are long and slender, much longer, but little broader, than in *A. pubiventris*; twelve branches to radial sector, five cross-veins before origin of radial sector.

Length of fore wing 33 mm., width 6.8 mm., length of abdomen 35 mm.

One from Akuriman, Venezuela, (Anduze) Oct.

Amazoleon pubiventris Walk.

One from Kabelstation, Surinam, 24 Sept. (Geijskes).

Described from Brazil.

The two species separate as follows:

Hind border of fore wing in part infusate; fore wings over 30 mm. long; tibia dark. *modestum*.

Hind border of fore wing not infusate; fore wings less than 30 mm. long; tibia pale..... *pubiventris*.

Ameromyia nigriventris Walk.

Venezuela: Akuriman, Oct. (Anduze); Ciudad Bolivar, 5 Sept., 8, 10 Oct.; Moitaco, 9 Sept. (Anduze); Maripa, Rio Caura.

Described from Brazil.

AUSTROLEONINA

- 1 — No white macrochaetae on front femora, often a few on front coxae; anal vein of hind wing often connected to cubital fork by two cross-veins; male with a pelotte on basal membrane of forewing close to abdomen....
..... *Moza*.

White macrochaetae on front femora as well as on front coxae; in hind wing the anal is not connected to cubital for more than once..... 2

- 2 — A more or less distinct banksian line..... *Austroleon*.

No banksian line..... *Carreo*.

Carreo Navas.

Genus was described as Carrea, which, being preoccupied, was changed.

Carreo immitis Walk.

Venezuela: Akuriman, Oct. (Anduze); Moitaco, 9-10 Sept. (Anduze); Palo Grande, Caracas, D. F., April (Pascual Puijbo).

Described from Brazil.

Moza irrigata Gerst.

Venezuela: Akuriman, Oct. (Anduze); Arabupu, Nov. Dec. (Amer. Mus.); Maripa, Rio Caura. Mt. Roraima, Brazil, 3,000 ft. (Amer. Mus.)

Described from Brazil.

Austroleon

No species have been seen from this area, but *A. camposi* Bks. occurs in Ecuador so may be found in Colombia.

MACRONEMURINAE

- 1—In the fore wings the cubital fork and the first anal vein run parallel to the cubitus for some distance, about equal width of wing; tibial spurs not equal to basitarsus..... (Gamini)..... 2

In the fore wing the cubital fork plainly diverges from the cubitus..... 3

- 2—In fore wings some cells of the anal area are crossed; wings not four times as long as broad..... *Dimarella*.

In fore wings no cells in anal area are crossed; wings over four times as long as broad..... *Allogama*.

- 3—No spurs, or short ones not one-half of the elongated basitarsus 4

Spurs distinct, about as long or longer than basitarsus 5

- 4—Wings hardly longer than body; in fore wing the radial sector arises beyond the middle of the wing, and at that point the costal area is not one-half as wide as the radial area; very short spurs on some legs..... *Mystroleon*.

Wings longer than body; radial sector arises plainly before middle of wing, and at that point the costal area is more than one-half as wide as the radial area; no spurs *Navasoleon*.

- 5—In front tarsus the last joint about equal to the four others together; tibiae usually very bristly..... 6

In front tarsus the last joint is plainly shorter than the four others together; pronotum usually longer than head; tibiae always very slender..... 9

- 6 — Radial sector arises near forking of cubitus.....
 *Antilloleon*.
- Radial sector arises well beyond the forking of
 cubitus 7
- 7 — Pronotum a little longer than broad behind; in hind
 wing the first anal vein is usually connected once to
 the cubital fork, wing marks small..... *Sosa*.
- 8 — Femora and tibiae short, former somewhat swollen;
 hind wing cubital area is two-celled; wings not par-
 ticularly slender..... *Psammoleon*.
- Femora and tibiae very long and slender, not swol-
 len; wings very long and slender; in hind wing the
 cubital area is three-celled..... *Incamoleon*.
- 9 — In the fore wings the radial sector arises near or be-
 fore the forking of cubitus; the united second and
 third anal vein ends in two veinlets; the second tarsal
 joint about as long as first, third and fourth scarcely
 shorter *Elachyleon*.
- In fore wings the radial sector arises well beyond
 the forking of cubitus; the united second and third
 anal vein ends in three veinlets; first tarsal joint long-
 er than second..... 10
- 10 — At least hind wings with large dark spots; wings broad-
 est toward tip; in hind wing the cubital branches run
 direct to hind margin..... *Glenurus*.
- No large marks in wings..... 11
- 11 — Fore wings broadest near stigma, much beyond middle;
 in hind wings the branches of cubitus bend somewhat
 parallel to hind margin before ending in margin....
 *Glenopsis*.
- Fore wings broadest near middle..... *Joergenia*.

Dimarella tarsalis Guilding.

From Moitaco, Venezuela, 18 Sept.

Moengo, Boven Cottica, Surinam 18, 21 May (Cornell);
Rockstone, Essequibo River, British Guiana, 26 June (Cornell).

(*D. effusa* Walk. is a synonym).

Described from Jamaica.

Dimarella angusta Bks.

Surinam: Paramaribo, at light, 1 April, 2, 21 May; 8 Nov.;
Combé, 15, 24 April, 12, 13, 15 June (all Geijskes).

British Guiana, Kartabo, at light, 7, 19 April, 6 June, 5, 15,
29 July, 11 Aug. (Beebe); Moengo, Boven Cottica, 13, 18 May
(Cornell).

Venezuela: Las Trincheras, 22 June (Anduze); Northern
Range (Lichy).

Described from Ecuador.

Antilloleon gen. nov.

The type is *Glenurus cerverai* Navas of Cuba and Haiti.
The tarsi are similar to those of *Incamoleon*, the first four
together no longer than the fifth joint. The radial sector arises
near the forking of cubitus; the united second and third anal
ends in three veinlets, the third anal being forked; the ven-
ation in general and legs much as in *Incamoleon*, the pron-
otum, however, is broader. The genus will doubtless be found
in South America.

Navasoleon gen. nov.

The type is *Gymnocnemis boliviana* Bks. found in East-
ern Bolivia, but may occur in Venezuela.

Elachyleon punctipennis Esben Petersen.

Described from Trinidad; there is a specimen from Pl.
Ma Retrait, Paramaribo, Surinam, 5 June, (Geijskes).

There is a black interantennal mark, truncate below; the pronotum wholly pale yellowish. The vertex is scarcely elevated; the tarsi are very long, having the second, third, and fourth joints each nearly as long as the first, the last joint is bent somewhat backward and below on basal two-third are many close bristles, the claws rather short; the spurs on front and mid tibiae are a little longer than two joints, on hind tarsi not quite equal to basal joint.

In the fore wing the united second and third anal ends in only two veinlets; the cross-vein from second anal back to first anal is just a trifle beyond the union of second with the third anal. In this specimen there are seven cross-veins before the radial sector (Petersen's figure shows five), and the origin of the radial sector is not quite so far basad as in his figure.

Incamoleon punctipennis Bks.

I. tetrastictus Navas described from Venezuela appears to be *I. punctipennis*.

Described from Colombia.

PSAMMOLEON

The South American species known to me may be tabulated as follows:

1 — Between cubital fork and first anal vein are about eight or nine cross-veins; hind tarsus elongated, basal joint equal to the next two together; in hind wing a short dark streak at rhagma..... *posticatus*.

Between cubital fork and first anal vein rarely more than four cross-veins..... 2

2 — Dark spots at end of anal vein and at rhagma quite large and prominent; prominent white hairs on sides of pronotum..... *ingeniosus*.

- Dark marks at end of anal and at rhegma little more than dark lines..... 3
- 3 — Pronotum with no median pale line or spot on front border, a pale stripe on each side; front femora with few white bristles; no pale band above antennae; hind femora with a dark spot above near base.... *parvulus*.
- Pronotum with a median pale line or a median pale spot on front border; front femora with numerous white bristles 4
- 4 — Two spots near rhegma well separated; pronotum with a pale spot on middle of front border..... *cautus*.
- The marks near rhegma form an oblique line, pronotum with median pale line..... 5
- 5 — In front of the dark rhegma line the cross-veins are mostly dark ones; in hind wing there is a dark dot at rhegma *debilis*.
- In front of the dark rhegma line there is a large area of wholly white cross-veins; no dark dot at rhegma in hind wings *chaperi*.

Psammoleon chaperi Navas.

Trinidad 16 March (Withycombe).

Described from Venezuela.

Psammoleon cautus Walk.

French Guiana: Nouveau Chantier, February (Le Moul't).

P. bipunctatus Navas appears to be a synonym.

Described from Brazil.

Psammoleon posticatus Bks.

Colombia (American Mus. Nat. Hist.)

Psammoleon debilis Gerst.

Colombia: Villavicencio, 450 m. (Fassl.)

Described from Chiriqui, Panama.

Sosa gentilis sp. nov.

Lower part of face yellowish, black from below the antennae up on vertex, a transverse row of reddish spots on vertex. Pronotum dark brown, a gray streak through the middle, and a broader gray streak each side stopping at the groove; extreme margins yellowish; thorax dull black; femora mostly brown, extreme base pale, tibiae pale, their tips dark, front pair dotted with dark, hind pair with an inner dark streak; tarsi dark at tips of joints. Abdomen black, apex of some segments narrowly pale.

Antennae moderately long; pronotum plainly a little longer than broad behind; tibial spurs of front and mid legs about equal to three tarsal joints, those on hind legs equal to two joints; fifth tarsal joint equal to the other four together, and below with a brush of stiff, black hairs.

In fore wings the veins with alternating streaks of pale and dark, most of cross-veins partly dark, in middle area of wing some are wholly pale; a dark mark up from end of anal vein not as large as that in *S. capitata*, a small dark spot at rhagma, two cross-veins slightly above bordered with dark, and behind is a curved brown streak over marginal forks about its width from the margin; stigma white.

In hind wings the venation marked as in front pair, a faint dark mark at rhagma and one or two marginal forks faintly bordered with brown. In fore wings seven cross-veins before the radial sector, nine branches of radial sector; four connections between cubital fork and anal vein. In hind wings one cross-vein before radial sector, seven branches to radial sector, and one cross-vein from anal to cubital fork, cubital area with two or two and one-half cells in width.

Fore wing 26 mm. long, hind wing 25 mm. long.

One from Kartabo, British Guiana, 4 November.

Type M.C.Z. 25961.

Glenopsis anomala Rbr.

Andes of Venezuela, May (Anduze).

Described from Colombia.

Glenopsis psilocerus Gerst.

Venezuela: Rio Chacaito, 14 June (Anduze).

Described from Merida, Venezuela.

Glenurus peculiaris Walk.

Surinam - Paramaribo, Bot. Gard., 17 Sept. (Geijskes).

British Guiana, Kartabo, 19 May (Beebe).

Described from Brazil.

MYRMELEONINAE

- 1 — Costal area of fore wings with some cells near stigma connected by cross-veins thus making two series of cells *Hagenomyia*.

Costal area of fore wings but one series of cells....
..... *Myrmeleon*.

Hagenomyia dolosus Walk.

Trinidad: Mayaro Bay, 6 Dec. (Weber).

Venezuela: Moitaco, 9 Sept. (Anduze).

British Guiana: Bartica, Dec. (Parish); Kartabo, 25 May, 5 April, 4 June, 4, 8 July (Beebe).

Surinam: Paramaribo, 15 Nov.; Kabelstation, 15 Nov.; Litani, Teti-creek, at light, 17 Aug. (Geijskes).

Described from Brazil.

Myrmeleon metuendus Walk.

Colombia: Arroyo Grande, Porto, 10 Dec. (Williamson); Rio Frio, Magdalena, 18 May, 12 July (G. Salt.)

Trinidad: Patos I., Gulf of Paria, 21 July (Weber).

Venezuela: Las Trincheras, June (Ohio State Univ. coll.)

The *Nezuela geayana* Navas appears to be a synonym.

Described from Venezuela.

ACANTHACLISINAE

The species known from Northern South America belongs to one genus, *Vella* of Navas.

Vella fallax Rambr.

Hacienda Curufue (Guarurries), Venez.

Paramo La Negra, Venez. 14 August (Anduze).

Described from "Guyane".

Unplaced

Guipa colombiana Navas 1923 is near *Carreo immitis*, but larger, 24 mm. fore wing, and has four cross-veins before the radial sector in fore wing; I have not seen it.

The *Glenurus withycombei* E. Peterson, 1927 from Trinidad is certainly not a *Glenurus* or in that tribe but from figure must be near *Dendroleon*. The hind wing shows similarity with *Dendroleon javanus*, but it is doubtful if it really belongs to *Dendroleon*; I have not seen it.

RESUMEN

Se describen el Género nuevo *Nemotolus* y la especie nueva *Amazoleon modestum* de la subfamilia Dendroleoninae; los Géneros nuevos, *Antilloleon* y *Navasoleon* y la especie nueva *Sosa gentilis* de la subfamilia Macronemurinae. El trabajo se basa en gran parte en Mirmeleonidos de Venezuela, pero contiene referencias a muchas especies de otros países americanos. Como en su trabajo anterior el autor presenta varias claves para la determinación de los Neurópteros.

